

Notice of Allowability

Application No.

09/983,032

Applicant(s)

KIM ET AL.

Examiner

Colin M. LaRose

Art Unit

2623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Election filed 4 November 2004.
2. ☒ The allowed claim(s) is/are 1-9.
3. ☒ The drawings filed on 22 October 2001 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date <u>0902</u> | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Charles Wieland (33,096) on 24 February 2005.

2. The application should be amended as follows:
Cancel claim 10.

REASONS FOR ALLOWANCE

3. The following is an examiner's statement of reasons for allowance:

U.S. Patent 6,529,202 by Wu discloses a method for segmenting an image by color in order to select representative colors. Wu's method includes a color clustering routine (205, figure 2), which is shown in detail in figure 3.

Referring to figure 3, Wu discloses transforming a color image into L*a*b* color space (204). Then, the image is segmented into an initial set of clusters (301). The clusters are then ordered from biggest to smallest (303). Next, if the color distance between the biggest cluster and the second biggest cluster is less than a threshold, the two clusters are merged together; otherwise, the clusters are not merged, and a partition remains between them (306). The clusters

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are then updated (307-309), and the process is iterated until the number of clusters is unchanged (302).

In contrast, claim 1 of the present invention provides for (b) partitioning the Lab color space into a plurality of layers and bins. Then, (c) an “upper last circle,” located in an upper layer, and (d) a “lower last circle,” located in a lower adjacent layer, are obtained. The circles are constructed by encircling the largest number of pixels that are most similar to a base pixel within a bin that has the largest number of pixels for that layer.

The upper and lower last circles are then (e) clustered together if the distance between their centers is less than a threshold; otherwise, (f) the cluster is partitioned, as claimed. The routine iterates until there are no additional lower adjacent layers.

Wu does not disclose constructing circles. Rather, Wu constructs clusters with irregular shapes.

Wu also does not disclose obtaining circles (or clusters) starting with the bin having the largest number of pixels in an upper layer, as claimed. Wu is not concerned with the location of the clusters relative to the color space. Rather, Wu is only concerned with the size of the clusters. Wu examines clusters for merging in order from biggest to smallest. Claim 1, on the other hand, provides for examining circles in successive layers to determine whether they should be merged, or included in the same cluster.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue

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fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Colin M. LaRose whose telephone number is (703) 306-3489. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au, can be reached on (703) 308-6604. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC 2600 Customer Service Office whose telephone number is (703) 306-0377.

CML

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25 February 2005



VIKRAM BALI
PRIMARY EXAMINER